

# 6AF11

## Dual Triode—Sharp-Cutoff Pentode

Dual Triode Has High-Mu Unit & Medium-Mu Unit

### DUODECAR TYPE

#### Electrical:

##### Heater Characteristics and Ratings:

Voltage (AC or DC) . . . . .  $6.3 \pm 0.6$  volts

Current at 6.3 volts . . . . . 1.050 amp

##### Maximum Heater Cathode Voltage:

Heater negative with respect to cathode:

Peak . . . . . 200 volts

Heater positive with respect to cathode:

Peak . . . . . 200 volts

DC component . . . . . 100 volts

##### Direct Interelectrode Capacitances: (Without external shield)

##### Triode Unit No.1

Grid to plate. . . . . 1.9 pf

Input:  $G_{T1}$  to ( $K_{T1}$ ,  $K_{T2} + IS$ ,  $K_p + G_{3p} + IS$ ,  $H$ ) . . . . . 3.0 pf

Output:  $P_{T1}$  to ( $K_{T1}$ ,  $K_{T2} + IS$ ,  $K_p + G_{3p} + IS$ ,  $H$ ) . . . . . 2.2 pf

##### Triode Unit No.2

Grid to plate. . . . . 3.6 pf

Input:  $G_{T2}$  to ( $K_{T2} + IS$ ,  $K_p + G_{3p} + IS$ ,  $H$ ) . . . . . 2.4 pf

Output:  $P_{T2}$  to ( $K_{T2} + IS$ ,  $K_p + G_{3p} + IS$ ,  $H$ ) . . . . . 3.8 pf

##### Pentode Unit

Grid No.1 to plate . . . . . 0.12 pf

Input:  $G_{1p}$  to ( $K_{T2} + IS$ ,  $K_p + G_{3p} + IS$ ,  $G_{2p}$ ,  $H$ ) . . . . . 10.0 pf

Output:  $P_p$  to ( $K_{T2} + IS$ ,  $K_p + G_{3p} + IS$ ,  $G_{2p}$ ,  $H$ ) . . . . . 4.5 pf

Pentode plate to plate of triode No.2 . . . . . 0.045 max. pf

Plate of triode No.1 to plate of triode No.2 . . . . . 0.06 max. pf

#### Characteristics, Class A<sub>1</sub> Amplifier:

	Triode Units	No. 1	No. 2	
Plate Supply Voltage . . . . .		200	200	volts
Grid Voltage . . . . .		-2	-	volts
Cathode Resistor . . . . .		-	220	ohms
Amplification Factor . . . . .		68	41	
Plate Resistance (Approx.) . . . . .		12400	9400	ohms
Transconductance . . . . .		5500	4400	$\mu$ mhos
Plate Current . . . . .		7	9.2	ma
Grid Voltage for $I_b = 10 \mu a$ . . . . .		-5.5	-	volts
Grid Voltage for $I_b = 100 \mu a$ . . . . .		-	-6.5	volts

##### Pentode Unit

Plate Supply Voltage . . . . .	50	200	volts
Grid-No.2 Supply Voltage . . . . .	150	150	volts
Grid-No.1 Voltage . . . . .	0	-	volts
Cathode Resistor . . . . .	-	100	ohms
Plate Resistance (Approx.) . . . . .	-	68000	ohms
Transconductance . . . . .	-	11000	$\mu$ hos
Plate Current . . . . .	55 <sup>a</sup>	24	ma
Grid-No.2 Current . . . . .	18 <sup>a</sup>	4.8	ma
Grid No.1 Voltage for $I_b = 100 \mu a$ . . . . .	-	-10	volts



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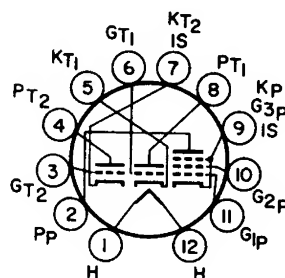
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# 6AF1

## Mechanical:

Operating Position . . . . . Any  
 Types of Cathodes. . . . . Coated Unipotential  
 Maximum Overall Length . . . . . 2.375"  
 Seated Length. . . . . 1.750" to 2.000"  
 Diameter . . . . . 1.062" to 1.188"  
 Dimensional Outline (JEDEC 9-58) . . . . See *General Section*  
 Bulb . . . . . T9  
 Base . . . . Small-Button Duodecar 12-Pin (JEDEC No.E12-70)  
 Basing Designation for BOTTOM VIEW . . . . 12DP

Pin 1-Heater  
 Pin 2-Pentode Plate  
 Pin 3-Grid of Triode Unit No.2  
 Pin 4-Plate of Triode Unit No.2  
 Pin 5-Cathode of Triode Unit No.1  
 Pin 6-Grid of Triode Unit No.1  
 Pin 7-Cathode of Triode Unit No.2,  
       Internal Shield  
 Pin 8-Plate of Triode Unit No.1  
 Pin 9-Pentode Cathode, Pentode Grid  
       No.3, Internal Shield  
 Pin 10-Pentode Grid No.2  
 Pin 11-Pentode Grid No.1  
 Pin 12-Heater



## AMPLIFIER — Class A<sub>1</sub>

### Maximum Ratings, Design-Maximum Values:

	Triode Units No.1 No.2	
Plate Voltage. . . . .	330	330 volts
Grid (Control-Grid) Voltage:		
Positive-bias value. . . . .	0	0 volts
Plate Dissipation. . . . .	1.1	2 watts

### Pentode Unit

Plate Voltage. . . . .	330	volts
Grid-No.2 (Screen-Grid) Supply Voltage . . . .	330	volts
Grid-No.2 Voltage. . . . .	See <i>Grid-No.2 Input Rating Chart</i> at front of Receiving Tube Section	
Grid-No.1 (Control-Grid) Voltage:		
Positive-bias value. . . . .	0	volts
Grid-No.2 Input:		
For grid-No.2 voltages up to 165 volts . . . .	1.25	watts
For grid-No.2 voltages between 165 and 330 volts. .See <i>Grid-No.2 Input Rating Chart</i>		
Plate Dissipation . . . . .	5	watts

### Maximum Circuit Values: (Values are for Each Unit)

	Triode Units Pentode Unit	
Grid-No.1-Circuit Resistance:		
For fixed-bias operation . . .	0.5	0.25 megohm
For cathode-bias operation . .	1	1 megohm

<sup>a</sup> value measured by recurrent waveform such that maximum ratings of tube are not exceeded.

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